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AGOR 27/28 Phase II

Progress Report (Technical)

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Contract Number: N0001412C0305

1. This report covers SIO activities during the month of May 2016.
2. Shipyard Representative biweekly reports and this report were delivered.
3. The work accomplished included Scripps technical review of proposed configuration changes. The shipyard representative report, submitted separately, details specific ship checks performed against technical standards.
4. SIO participated in Phase III mission system installation during April and May. Report of this activity will be made by separate correspondence from Woody Sutherland. SIO has not received any bills for Phase III work from Dakota Creek Industries (DCI). SIO also participated in weekly phone coordination meetings.
5. SALLY RIDE remains behind on construction; however, the newly established NAVSEA PEOSHIPs/DCI 29 June 2016 delivery date appears achievable. Of significant concern with respect to delivery is propeller cavitation. Propeller cavitation observations from retired Naval Surface Warfare Center Carderock Division (NSWCCD) propeller expert provided via ManTech:
 - A. DCI's model basin did not do Reynolds number scaling correction for tip vortex cavitation prediction. Without correction, model test data over predicts tip vortex cavitation inception speed.
 - B. Dr. Scott Black of NSWCCD, head of propulsors group, confirmed this.
 - C. With correction, estimate for tip vortex cavitation is 7.6 knots.
6. Report recommendations to consider:
 - a. Round leading edge root sections to remove flat with sharp edges
 - b. Remove four cable snag preventers from rope guard area of each prop.
 - c. Perform "hot pitch calibration" (i.e. fine adjustment) on each prop before acoustic testing.
 - d. Internal cavitation viewing with stroboscopic lighting would pinpoint cavitation source.
7. DCI directed Hundestad to round leading edges. Hundestad ground the propeller on 16 May 2016 just prior to completion of dry docking. It was not reported by DCI if the propeller was

found to be not in conformance to plans, thus requiring grinding, or if they were following recommendations from Hundestad. We will have opportunity to observe effects of the tip grinding during sea acceptance testing of mission system installation 1-3 June 2016 including stroboscopic filming.

8. Unknown schedule impact should cavitation remain or worsen after propeller tip grinding.
9. DCI seems eager to meet 29 June 2016 delivery date and is pricing in accommodation for risk into all changes that might involve ship structure or large amounts of interference or insulation removal. Scripps intended to perform a bridge wing modification easing access from the pilot house to watchstanders desiring to go forward, however, DCI price was above fair and reasonable criteria. Scripps will delay this modification until post shakedown availability (PSA).
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